

CLEAN VERSION OF AMENDED SPECIFICATION PARAGRAPHS

A SOLVENT PREWET AND METHOD TO DISPENSE THE SOLVENT PREWET

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Serial No.: Unknown

Paragraph beginning at page 3, line 28:

The photoresist is deposited on each wafer after the wafer is mounted in the process bowl of a track coating unit. One partial solution to controlling the amount of solvent (and other photoresist materials) used is to use a chemical dispensing unit which provides tighter control over the amount of solvent deposited on any one wafer. One such system is described in European Patent 618,504, issued to Hasebe. Hasebe describes a system employing a specialized dispensing head which has a single nozzle for dispensing solvent and a single nozzle for dispensing resist solution. Hasebe controls where the material is dispensed on the wafer by moving the dispense head to different locations relative to the wafer. The system disclosed in Hasebe requires, however, a number of specialized devices, including a moveable dispense head, a pump for the solvent and a temperature adjustment mechanism. This type of system reduces the waste of solvent resulting from over-application, as well as increasing wafer-to-wafer consistency due to the more accurate dispensing of the material. This is only a partial solution, however, because even though a variety of units for dispensing chemicals in this manner are marketed, the units are designed for low volumes of low viscosity fluids. In addition, each unit is a specialized system, so when a shop wishes to employ such a method the shop has to retrofit or replace existing equipment. This results in reduced production flow, and overhead costs are significantly increased.

Paragraph beginning on page 7, line 15:

Conventional processes primarily employ a three-component photoresist, with either ethyl lactate (EL) or propyleneglycol monomethylether acetate (PGMEA) as the preferred solvent component. Both of these substances have a rather high evaporation rate, however, which shrinks the process control window. To compensate, conventional systems use more photoresist as well as a greater percentage of solvent to total photoresist volume. In contrast, according to one aspect of the present invention, a low vapor-pressure solvent is used. In one embodiment a mixture of aliphatic ester and diacetone alcohol is used as the solvent component. The ratio of the materials can range from 10% ester and 90% alcohol, to 30% ester and 70% alcohol. The dissipation rate of this solvent is significantly reduced over

conventional solvents because diacetone alcohol has a heavier molecule, creating a very low pressure solvent. The rate of evaporation is up to ten times lower than that of the conventional solvents. One direct result is that semiconductor processing incorporating this type of solvent requires very little solvent to achieve very good resist thickness profiles. With the diacetone alcohol solvent, the process uses as little as 0.3-1.0 cc solvent prewet solution per wafer (as compared to 1.0 cc or greater solvent solution per wafer).

1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358</
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